

Appl. No. : 10/629,210
Filed : July 28, 2003

REMARKS

The Office Action mailed on December 14, 2005 has been carefully considered. Accordingly, the changes presented herewith, taken with following remarks, are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

Claims 1-14 and 31-39 are pending in the current application. New claims 40-45 have been added for consideration by the Examiner. No new matter has been introduced by new claims 40-45. Claims 31-32 and 38-39 has been cancelled without prejudice. Applicants respectfully traverse the rejections of claims 38 and 39 as outlined below; however, for the purpose of advancing the present case claims 38 and 39 have been cancelled. Applicant reserves the right to prosecute claims 31-32 and 38-39 in a continuation application. Claim 1 has been amended to further point out and clarify subject matter which Applicants regard as the invention. No new matter has been introduced by this amendment. For example, at least FIG. 2 and page 9, lines 7-9 of the specification as originally filed support the limitation of the supplemental intraocular lens being disposed separate from the primary intraocular lens when placed within the eye.

Claims 1-2, 7-8, 13-14, and 31-32 stand rejected under 35 U.S.C. § 102(e) as being anticipated by WO 03/000154 (“Miller et al.”). Claims 38 and 39 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Number 5, 117,306 (“Cohen”). Claims 1-3, 7-8, and 31-39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Number 6,197,057 (“Peyman et al.”) in view of Cohen. Claims 4-6, 11-12, and 13-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Peyman et al. and Cohen as applied to claims 1-3, 7-8, and 31-39, in further view of at least one of U.S. Patent Numbers 5,366,502 (“Patel”) or 6,107,058 (“Portney”), or U.S. Patent Application Numbers 2003/0097176 (“Nordan et al.”) or 2002/004253 (“Copeland et al.”). Applicants traverse these rejections for the reasons discussed below.

Claims 1-2, 7-8 and 13-14 Are Not Anticipated by Miller et al.

Claims 1-2, 7-8, 13-14, and 31-32 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Miller et al. Claims 31-32 have been cancelled without prejudice. Applicants respectfully traverse the rejection for the following reasons.

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Miller et al. teaches an intraocular lens that is a combination of a positive lens and a negative lens. Miller et al. asserts that the positive-negative doublet combination of lenses yields a much larger focusing range with small changes in separation between the component lenses, when compared to either a positive singlet configuration or a positive-positive doublet configuration. Miller et al., page 2, lines 11-18. The combination of the positive and negative lenses are used to correct a patient's vision. Miller et al., page 9, lines 1-8.

By contrast, Applicants' claim 1 is directed to an intraocular lens comprising, in pertinent part, a primary intraocular lens configured to be effective in correcting vision of the patient and a supplemental intraocular lens configured to modify the vision correction provided by the primary intraocular lens. Miller et al. does not teach or suggest a primary intraocular lens configured to be effective in correcting vision of a patient. To the contrary, Miller et al. requires a combination of lenses, specifically a positive lens and a negative lens, to correct a patient's vision. Miller et al. actually teaches away from a primary lens to correct vision with the assertion that the positive-negative doublet combination of lenses yields a much larger focusing range as compared to either a positive singlet configuration or a positive-positive doublet configuration. Miller et al., page 2, lines 14-18.

This teaching away from a single lens to correct vision is further illustrated with reference to FIGS. 7-12 of Miller et al. On page 13, lines 6-7, Miller et al. teaches a dual lens comprising a positive lens 42 with a power of +44 Diopters and negative lens 43 with a -22 Diopter power. Miller et al. goes on to contrast the greater diopter change provided by their invention (illustrated by the lens combination in FIGS. 9 and 10) compared to the single lens 40 illustrated in FIGS. 7 and 8 (Miller et al., page 13, line 25 to page 14, line 2). Miller et al. does not teach, suggest, or imply that either of the lenses in the dual lens combination is, by itself, effective in correcting vision of a patient, as recited in Applicants' claim 1.

Furthermore, Miller et al. does not teach or suggest a supplemental intraocular lens configured to modify the vision correction provided by a primary intraocular lens. To the contrary, Miller et al. teaches the use of a highly negatively powered lens (e.g., the lens 43 with a power of -22 Diopters) that counteracts a highly positive powered lens (e.g., the lens 42 with a power of +44 Diopters) to produce a net power that is in a range for correcting vision of distant or near objects (e.g., at infinity and 1/3 m), depending on the distance between the two lenses.

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At least because Miller et al. does not teach or suggest all of the limitations of claim 1, Applicants request the Examiner allow claim 1. Claims 2, 7-8 and 13-14 depend from claim 1 and further define the invention of claim 1. Thus, claims 2, 7-8 and 13-14 are patentable over Miller et al. at least for the same reasons that claim 1 is patentable thereover, and are patentable in their own right as well.

Claims 1-3, 7-8, and 33-37 Are Patentable Over Peyman et al. and Cohen.

Claims 1-3, 7-8, and 31-39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Peyman et al. in view of Cohen. Claims 31-32 and 38-39 have been cancelled without prejudice. Applicants respectfully traverse the rejection of claims 1-3, 7-8, and 33-37 for the following reasons.

Peyman et al. teaches two distinct embodiments of supplemental intraocular lenses to modify the lens system comprising the cornea and either eye's the natural lens or another intraocular lens implanted in the eye. In one embodiment, the supplemental intraocular lens has substantially no refractive power except for a high minus lens portion at its center. In another embodiment, Peyman teaches a supplemental intraocular lens 166 that does not provide any refractive power (Peyman, column 9, lines 8-11), but rather creates a prismatic lens system to focus light rays onto a portion of the retina away from the macula (Peyman et al., column 9, lines 21-25).

Cohen teaches a diffraction bifocal lens comprising two profiled surfaces, wherein one profile provides for the bifocality of the lens and the other profile compensates for chromatic aberration. Cohen, Abstract.

By contrast, claim 1 is directed to an intraocular lens comprising, among other things, a primary intraocular lens configured be effective in correcting vision of the patient and a supplemental intraocular lens configured to modify the vision correction provided by the primary intraocular lens, the supplemental intraocular lens disposed separate from the primary intraocular lens when placed within the eye and having a positive optical power or a negative optical power. Neither Peyman et al. nor Cohen, either alone or in combination, teach all these elements of claim 1.

For example, Cohen does not teach or suggest a supplemental intraocular lens configured to modify the vision correction provided by a primary intraocular lens. Furthermore, the Examiner has conceded that Peyman et al. does not teach or suggest a substantially completely diffractive optic having a positive optical power or a negative optical power.

Furthermore, Applicants assert that one of ordinary skill in the art would not have an incentive to combine the teachings of Cohen with that of Peyman et al. The Examiner has taken the position that it would have been obvious to provide a diffractive supplemental lens having the characteristics disclosed by Cohen to the teachings of Peyman et al. Applicants traverse this assertion. First, Peyman et al. does not appear, in general, to use the term "diffractive" in the same sense as Cohen. Specifically, Peyman et al. generally associates the term "diffractive" with the prismatic deflection of light rays (e.g., Peyman et al. Abstract, lines 18-21, column 1, line 15, column 2, line 23, column 3, lines 8-9, column 9, lines 10-12 with lines 22-24). By contrast, Cohen uses the term diffractive to mean the focusing of rays to a focal point based on repeating a basic phase shifting profile (see Cohen, column 1, lines 6-13). Thus, although both Peyman et al. and Cohen both use the term "diffractive", Applicants assert that they mean something different in each case. Therefore, one of ordinary skill in the art would not combine the references, since each appears to refer to different phenomenon when using the term "diffractive".

Secondly, even if Peyman et al. were using the term "diffractive" in the same sense as Cohen, there still would not be an incentive to combine the cited references. Peyman et al. teaches two basic embodiments of a supplemental intraocular lens which will now be discussed in greater detail with regard to the proposed combination with Cohen.

In one embodiment, Peyman et al. teaches a "light diffractive" supplemental intraocular lens, such as a prism-shaped intraocular lens, having no refractive power, wherein the lens redirects the light rays entering the eye onto a portion of the retina away from the macula to create an image unaffected by macula degeneration (Peyman et al., Abstract, line 18 to end). Thus, Peyman et al. actually teaches away from a diffractive optic having a (positive or negative) optical power, as required by Cohen or Applicants' claim 1, by teaching a prismatic lens system in which a supplemental intraocular lens does not provide any refractive power (see also, Peyman et al., column 9, lines 10-12 and 22-24).

Not only would one of skill in the art not have a motivation to combine Cohen with this first embodiment of Peyman et al., but there would not be an expectation that such a combination would succeed, since Peyman et al. requires a supplemental element 166 that has a prism-like cross-sectional shape to produce a diffractive prismatic effect (see Peyman et al., column 9, line 7 and column 2, line 23), while Cohen teaches a diffractive element that produces two focal points. Thus,

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the teachings of Cohen are seemly contrary to those of Peyman et al. or, at a minimum, do not produce a prisms-like effect required by Peyman et al.

In a second basic embodiment, Peyman teaches a “teledioptic” system (e.g., as illustrated in FIGS. 6, 11, 18, 20, and 21 of Peyman et al.) in which a supplemental optical element 116 has no refractive power except for small recessed portions 118, 120. In this embodiment, Peyman et al. does not suggest or even imply that the supplemental optical element 116 be a diffractive element having positive or negative optical power, as required by claim 1. Furthermore, even if Peyman et al. all were to suggest a diffractive element in the first embodiment, it would be incorrect to conclude this somehow suggest a diffractive element for this second embodiment, since the principle of operation and function is completely different for each embodiment. Therefore, one of skill in the art would not have an incentive to combine the teachings of Cohen in this second embodiment, since Peyman et al. does not teach or suggest the use of a diffractive lens for this embodiment. Also, because the recessed portions 118, 120 of the supplemental element 116 taught by Peyman et al. are relatively small, Applicants contend that there would not be a reasonable expectation of success in combining Cohen with this embodiment of Peyman et al. It is well known within the art that the effectiveness of diffractive lens, as taught by Cohen, depends on there being a sufficiently large number of diffractive zone present to interfere with one another in order to produce one or more diffraction orders of a predetermined diffraction efficiency.

By way of summary, one of ordinary skill in the art would have neither an incentive to combine Cohen with either of the two main embodiments taught by Peyman et al., nor a reasonable expectation that such a combination would succeed.

Even if one were to combine the teachings of Peyman et al. and Cohen, the combined references still would not teach all these elements of claim 1. For example, neither Peyman et al. nor Cohen, either alone or in combination, teaches a supplemental intraocular lens disposed separate from a primary intraocular lens that is effective in correcting vision of a patient. Rather, Peyman et al. teaches a supplemental intraocular lens that is attached to a natural lens or another intraocular lens by glue or any other suitable means (e.g., Peyman et al., column 8, lines 42-45 and column 9, lines 31-34), even if the diffractive lens taught by Cohen were added.

At least because there is no incentive for one skilled in the art to combine Cohen with Peyman et al. nor an expectation of success, and because neither Peyman et al. nor Cohen, either alone or in combination, teach or suggest all of the limitations of claim 1, Applicants request the

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Examiner allow claim 1. Claims 2-3, 7-8 and 33-37 depend from claim 1 and further define the invention of claim 1. Thus, claims 2-3, 7-8 and 33-37 are patentable over Peyman et al. and Cohen at least for the same reasons that claim 1 is patentable thereover, and are patentable in their own right as well.

Claims 4-6, 11-14, 33-37 Are Patentable Over Peyman et al., Cohen, Portney, Nordan et al., and Copeland et al.

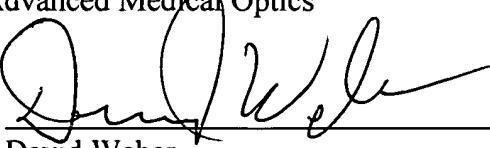
Peyman et al., Cohen, Portney, Nordan et al., and Copeland et al. have been used in combination with Peyman et al. to reject claims 4-6, 11-12, and 13-14. Claims 4-6, 11-14, and 33-37 are dependent from amended claim 1. Applicants assert that amended claim 1 is patentable over Peyman et al. and Cohen for the reasons discussed above. The examiner has not produced a prima facie case that amended claim 1 is obvious over Peyman et al. and Cohen in light of any of the other cited references. Accordingly, Applicants further assert that claim 1 is patentable over all these references. Claims 4-6, 11-12, and 13-14 depend from claim 1 and further define the invention of claim 1. Thus, claims 4-6, 11-12, and 13-14 are patentable over Peyman et al., Cohen, Portney, Nordan et al., and Copeland et al. at least for the same reasons that claim 1 is patentable thereover, and are patentable in their own right as well.

CONCLUSION

For the foregoing reasons, Applicants respectfully assert that the claims now pending are allowable over the prior art of record. Therefore, Applicants earnestly seek a notice of allowance and prompt issuance of this application.

The Commissioner is hereby authorized to charge payment of any fees associated with this communication to Deposit Account No. 502317.

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